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TITLE: METALLIC SURFACE TREATMENT AGENT, METALLIC  
SURFACE TREATMENT METHOD AND SURFACE TREATED METALLIC  
MATERIAL

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INVENTOR-INFORMATION:

NAME	COUNTRY
SASAKI, MOTOHIRO	N/A
SAITO, KOICHI	N/A

ASSIGNEE-INFORMATION:

NAME	COUNTRY
NIPPON PAINT CO LTD	N/A

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ABSTRACT:

PROBLEM TO BE SOLVED: To provide a metallic surface treatment agent which gives excellent corrosion resistance and electric conductivity of the film formed therefrom, and excellent coating adhesion in the formation of a top coating material on a film, a metallic surface treatment method, and a surface treated metallic material.

SOLUTION: The water based coating agent for a metallic material is a water based composition obtained by blending a water based dispersion resin of 5 to 30 mass% by the concentration of a solid content, silica fine particles of 1 to

10 mass%, a thiocarbonyl group-containing compound of 0.02 to 5 mass%, and phosphoric ions of 0.01 to 0.5 mass%. The water based dispersion resin is a water dispersed body obtained by reacting a water-dispersed ionomer resin obtained by neutralizing  $\geq 30\%$  of the carboxyl group in an ethylene-unsaturated carboxylic acid copolymer containing unsaturated carboxylic acid of 10 to 30 mass% by using calcium ions with an epoxy resin.

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